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Observation of prompt J/ψ meson elliptic flow in high-multiplicity pPb collisions at $\sqrt{s_{NN}}=8.16$ TeV (Article) [\(Open Access\)](#)

Sirunyan, A.M.^a, Tumasyan, A.^a, Adam, W.^b, Ambrogio, F.^b, Asilar, E.^b, Bergauer, T.^b, Brandstetter, J.^b, Dragicevic, M.^b, Erö, J.^b, Escalante Del Valle, A.^b, Flechl, M.^b, Frühwirth, R.^b, Ghete, V.M.^b, Hrubec, J.^b, Jeitler, M.^b, Krammer, N.^b, Krätschmer, I.^b, Liko, D.^b, Madlener, T.^b, Mikulec, I.^b, Rad, N.^b, Rohringer, H.^b

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Abstract

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A measurement of the elliptic flow (v_2) of prompt J/ψ mesons in high-multiplicity pPb collisions is reported using data collected by the CMS experiment at a nucleon-nucleon center-of-mass energy $\sqrt{s_{NN}}=8.16$ TeV. Prompt J/ψ mesons decaying into two muons are reconstructed in the rapidity region in the nucleon-nucleon center-of-mass frame (y_{cm}), corresponding to either $-2.86 < y_{cm} < -1.86$ or $0.94 < y_{cm} < 1.94$. The average v_2 result from the two rapidity ranges is reported over the transverse momentum (p_T) range from 0.2 to 10 GeV. Positive v_2 values are observed for the prompt J/ψ meson, as extracted from long-range two-particle correlations with charged hadrons, for $2 < p_T < 8$ GeV. The prompt J/ψ results are compared with previous CMS measurements of elliptic flow for open charm mesons (D^0) and strange hadrons. From these measurements, constraints can be obtained on the collective dynamics of charm quarks produced in high-multiplicity events arising from small systems. © 2019 The Author(s)

SciVal Topic Prominence

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Author keywords

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